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SOCIETIES.

Meeting of the American Dental Association at Saratoga,

AUGUST 5, 6, 7, 8, 1884.

Morning session, Tuesday, August 5th, 11 A.M.

The following words were spoken by Dr. Cary, of Saratoga:

Almighty and everlasting God, in whom we live and move and have our being, we bow before thee at this time in recognition of thy power, thy kindness and thy love. Blessed be thy holy name, that alloweth thy brethren to dwell together in unity. Blessed be thy holy name for all the gifts with which thou hast endowed us—the gifts of wisdom and understanding. Blessed be thy holy name for the gift that moveth the hearts of men to find out witty inventions for the good of thy children. Bless their deliberations, and grant to all that in their works they may be guided by thy hand and by thy power, and when the hour shall come when in thy convenience they shall close their labors here, and turn their faces homeward, wilt thou be with them. O, God, conduct them in safety. Be with their loved ones; wilt thou spread thy wings of protection over them, and wilt thou keep them in safety for the love of our Savior Jesus Christ. The love of Jesus Christ and the fellowship of the Holy Ghost be with us evermore. AMEN.

Treasurer calls the roll of permanent members, viz:

*Drs. W. H. Atkinson, John Allen, W. W. Alport, J. G. Ambler, S. H. Brown, W. C. Clark, E. Parmelee Brown, L. Morse, C. A. Frederich, Chas. F. Booth, F. C. Barlow, D. Cabe, R. Cushing, J. Crouse, J. Bunnell, C. D. Cook, B. P. Darby, A. M. Dudley, W. H. Fundberg, M. F. Fidley, G. L. Fields, G. J. Frederick, Gardner, T. L. Gilbert, J. R. Huber, A. W. Holden, T. Holmes, W. T. Hough, A. O. Hunt, S. D. Clark, E. D. Cross, R. F. Wern (?), L. C. Ingersoll, W. H. Keif, Norman W. Kingsley, Baker, James Loomis (?), James Mac Manus, G. J. Mac Kellops, G. W. Macalhenny (?), Charles Merrick, C. W. Maloney, Odell, Chas. Osgood, M. C. Peirce, J. W. Palmer, J. A. Robinson, M. Rhein, A. F. Rich, H. M. Smith, Stockton, Spalding, Swazey, J. Taft, W. H. Truman, C. L. Henn (?), J. G. W. Warner, E. A. Washburn, Will Walkford (?), Chas. A. Meeker, Arth. Hunt.

It is voted to dispense with the reading of the minutes of the last meeting.

Chairman Odell, of the committee on arrangements, outlines the programme: Daily sessions from 9.30 A. M. to 2 P. M., and 8 P. M. to adjournment; also the motion to print at the end of the programmes Section 1 of Article 3, referring to the dues, and Section 6 of Article 2, referring to the formation of sections.

The Grand Union has allowed a deduction of $1, if it is made the head-quarters.

It is further voted to have the clinic Wednesday afternoon.

Chairman of executive committee, Dr. Crouse, reports the names of the delegates from local societies which have qualified:†

State Society of Missouri, Dr. Spaulding.

Seventh District Dental Society, N. Y., Chas. Towle (?).

Pennsylvania State Society, W. H. Truman.

N. J. Dental Society, Chas. S. Stockton.

Conn. Valley Dental Association, J. MacManus, G. L. Dudley.

New England Dental Society, S. D. Hodge, R. F. Brown.

Society of the Alumni of the Dental Department of the University of Pennsylvania, A. M. Field, C. W. Galiner, Earle C. Paus (?).

First District Dental Society of New York, Theo. A. Woodward.

Chicago Society, A. W. Harland, J. N. Swazey, J. N. Crouse.

Illinois Society, L. Cushing.

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*These names being taken by ear from the reading, are not always exact.

†Taken from a poorly read report by short-hand. If of no other good, it will direct the attention of secretaries to proper reading.

Dental Society of the State of N. Y., Ambler, Rich, Work(?).
Washington City Dental Society, A. F. Hunt.
New Jersey Dental Society, C. A. Kemp, Lovey, Bear, Barlow.
Maryland Dental Association, N. F. Clummer (?), M. W. Foster.
Brooklyn Dental Society, C. D. Cook.
Kentucky Dental Association, J. Gough (?).
Michigan State Dental Association, J. C. Walker.

[From here the reading became so confused as to be unintelligible.]

Secretary Dr. Cushing moves two changes in the constitution in regard to the formation of sections, by which they are organized a day earlier.

Dr. Cushing gives as a reason for the change the fact that at the last session the attendance is usually so small, and the members are so eager to get away, it is difficult to call together a sufficient number.

Furthermore, to add to this Section 3: "Whereupon the section shall immediately proceed to the election of a chairman and such other officers as they may see fit," and to strike out Sections 4 and 5, containing provision for assigning members. The motions are unanimously adopted.

THE PRESIDENT'S ADDRESS (EXTRACT).

Gentlemen of the American Dental Association:

A quarter of a century ago a company of representative American dentists, duly appointed by local societies, assembled at Niagara to consider the desirability of organizing an American association. It was organized the following year at Washington and held single annual meetings until the present time. It was named the American Association. Its objects were well known and high. Of its original members, a few remain until the present time, honored representatives of local societies, faithfnl members of the Association which they helped to organize. Others of us, by reason of advance in years, are prevented to attend; others have finished work on earth, and passed away. Hardly a year passes that we are not called to record such deaths. To-day it becomes my sad duty to announce another — that of Dr. Buckingham. He was one of the original members of the Association and, from its organization to the time of his death, was rarely absent from its annual sessions. He was of an affectionate disposition, genial, modest and earnest; he was one whom we honored as a dentist and loved as a man.

To some this quarter of a century has passed with lightning ra-

pidity; to others it contained years of recorded history. It is profitable to count mile-stones. What stupendous events have occurred since our organization, which have affected us as nation and as association! In the quarter of a century passed, the population of the United States has increased from 30 to 57 millions, a terrible civil war was fought, and enemies have become friends; the Atlantic cable was laid, the Pacific railroad has been built, and the locomotive whistles from Maine to the Golden Gate; our Republic celebrated the anniversary of its existence; electric light, telephone, phonograph were introduced, and arts and science obtained new additions; the colleges and schools have doubled, and woman has become emancipated. The changes in the profession were also great; in 1858 there were only 4,000 dentists in America, now there are more than 12,000; less than twelve societies then, now more than one hundred; then only three colleges, now twenty; then not one single state law regulating the practice, now no less than nineteen states have enacted laws. Then the literature consisted of a few text-books, one or two monthly or quarterly journals, and the publication of occasional proceedings. We have not less than twenty periodicals—twelve monthly, seven quarterly, and one annual—and in addition publish the proceedings of several State societies, which prove valuable additions to our literature in America. But growth is not always progress. It has been thought that the rapid increase in the dental profession has been a detriment rather, and that the schools have increased too rapidly, and that too many graduates have been sent out. There is one serious objection to the further increase of colleges, namely: the want of support. So long as dental colleges depend on the fees of students for support, so long an increased attendance is the only way to increase the resources. A preliminary examination alone can determine the point of fitness, and even then the difficulty would not be overcome, for the reason that an examination cannot embrace all qualfications of fitness; some may be intellectually well endowed, but not fit in mechanical qualifications. What these schools most need is better endowment. It is hardly expected that such a happy condition of things will be brought to pass in the near future. It would be better to have fewer schools with a larger attendance in each, and better facilities for education. If all the dentists in America would contribute five dollars each for five years to raise a fund and make endowments, and give a sufficient income to professors to devote their time to such a school in a large city, governed by trusty persons, or

perhaps by a State society, it would certainly command the attention of the dental profession.

A tendency seems to exist toward the development of dental de-departments in universities; and where they are in large cities, and where the parent school is able to bear a large share of the expense, such an union seems to promise well; but such a step is based upon the belief that dentistry is but a branch medicine; if such is the case, it should demand for graduation the degree of Dr. The dental schools of America have cause to pride themselves, when compared with a quarter of a century ago, and it is just to remember the valuable services of their teachers. This Association has the right to demand that all schools should require the attendance of more than one course of lectures. It is a fact that a meeting of dental schools has been called to fix a common standard of examinations, and it is hoped that a dental candidate for graduation must have spent two years at least in college. Another progressive change is that so many States have made laws protecting the public, some providing that the State society should appoint a board of examiners. One, of New York, has ventured to say that only graduates from certain colleges should practice. If the colleges are lax, the State should step in, its examiners should compel each man to give qualification before entering a specialty. In order to be sufficient, these appointments of examining boards should be as rigid as the examination of colleges; otherwise they would be rather sought than those of the colleges. It does not seem right that the examining board should have power to grant degrees, for this would put it in competition with the colleges, yet condemn the colleges for issuing them without a curriculum.

Another progress is to be noted in literature. It was said that all theoretical work was done on the other side of the Atlantic, and that Americans were practically proficient. That cannot be said at present. The scientific work done by dentists in America will compare favorably with that done in Europe. One has but to read the articles in the journals and papers to be convinced of the truth of the assertion. Were it not for the bread-and-butter side of life and rush to get rich, our profession would come to the front with greater evidence of its capacity to do scientific work. Editors of the dental journals have the greatest difficulty to procure good articles for their magazines, because the best men have no time.

Fault has sometimes been found with the plan of membership of the American Association, some contending that an association, made

up of the delegates of State and local societies, ought to have no permanent membership, and ought to be a delegate-society only. If such a plan would work better than the one we have now in existence, would have to be determined by experiment. Prior to 1878, the work of the Association was under the management of standing committees; but some suggested a new plan: the permanent members were distributed to sections, each with a chairman. Many consider it an experiment. Perhaps it is yet too soon, but your chairman is not alone in the belief that the Association has not accomplished as much under its present system as under the old standing committees. A large number from the profession at large are constantly in attendance, but a large number are not constant; they constitute the complaining element; they work not themselves, but criticise disparagingly the work of others. Also some members appointed by the local societies come late and take their departure early. It has been urged that the time of meeting is unfavorable, that we should not convene, when the physical and mental energies are at low ebb; the difficulties at another time are so serious that few will abandon their practice to come. The needs of this Association can be embraced as to be: *More honest work, less adverse criticism.* (Cheers.)

Drs. Ambler, Allen and Taft are put on a committee to report relative to the death of Dr. Buckingham.

Dr. MACKELLOPS moves that a committee of five be appointed to report on that part of the president's address that refers to the number of delegates being elected into the Association. He mentioned the names of Drs. Parmlee Brown, Harland, Taft, Foster, Mackay. According to an amendment, they are instructed to report upon any part of the address.

(The motion was carried.)

Dr. PEIRCE called attention to the fact that there is a meeting of the the college faculties in a room adjoining, in the afternoon.

Committee on Publication—Dr. CUSHING—reported receipts, $27; expenditures, $30.05.

Sections 6, 2, 7, 1, 4, 3 have meetings during the forenoon.

Dr. COOK protested that names of men who are no longer members of the Association are carried on the list of sections.

Dr. CUSHING has made several times the pleasant observation that the members again joined and paid their dues whose names were kept on the list.

Meeting adjourned at 2.05.

EVENING SESSION—*Tuesday, August* 5, 1884.

Called to order at 8.10 P. M.—President DARBY in the chair.

It is voted to give a special evening to the paper and stereoscopic exhibit of Dr. Williams.

Section 6 is first to report, Dr. Harland, chairman: Pathology, &c., Materia Medica.

Only one paper in the section, by Dr. Harland himself, together with a synopsis of two new remedies. (See Laboratory of this number.)

DISCUSSION.

Dr. ODELL: That is what I call a good paper. The doctor did not mention manipulation of the gums and lets the drugs do the whole work. I have had two cases, one not long ago, where manipulation seemed to be about the only thing which benefited them. This was supplemented by the application of the galvanic current. I came to the conclusion that it was a sort of necrosis.

Dr. BOGUE: Why does Dr. Harland recommend Canada balsam at a certain stage? Can he give the rationale? And why at another point precipitated chalk and powdered myrrh?

Dr. HARLAND: The treatment with Canada balsam is before the beginning of the systemic treatment; perhaps no particular benefit is derived from the myrrh in the small quantity used, but it may disguise the taste of other things that might be disagreeable to the patient. The form of a paste seems to have the advantage of not lodging between the teeth.

Dr. BOGUE: It does not seem consistent after removing deposits to use remedies which, ex necessitate rei, must produce deposits; these substances mentioned are precipitated by water, and the effect must be to render the teeth sticky and unclean; I have noticed for many years a tendency to prescribe tincture of myrrh, but never found what it was for, and never saw the least good coming of it.

Dr. HARLAND: I have used the paste myself and never became conscious of a deposit on my own teeth and gums. I think the patient will brush away much more completely the paste than the powder.

Dr. BARRETT: With the exception of dental caries, none of the diseases of the teeth comes more frequently under our treatment than this pyorhœa alveolaris; only when we shall have understood the etiology will we be enabled to speak intelligently about therapeutics. Is it an affection of the membranes of the tooth? Is it

incidental? Is it in the alveolus? Is it confined to the periosteal membrane? All this has to be answered first. Those cases which have caused me the greatest anxiety have been those in which a simple removal of any deposit and the simple application of adstringents, or cauterants, or any other class of remedies was not sufficient to reach the bottom of the disease. With one now famous person —on every board fence you see his picture—I had to make frequent operations, until I succeeded in arresting the cause of the disease; my treatment has been the removal of the edge of the alveolus, because I believe the disease to consist in caries of the alveolus; I could not call it alveolar necrosis, because there was no sequestrum formed; it was a wasting of the alveolar walls, due to a periodontal inflammation or a disease in the wall. These I believe are affected in all serious cases. I never had any success in curing, until I had established a line of demarkation; the after treatment was then only palliative. The remedy most efficacious has been chloride of zinc. I have also used the iodide of zinc. This chloride of zinc is well known to have a stimulating effect. I used it after the surgical application of aromatic sulphuric acid.

Dr. SEARLE: In what strength?

Dr. BARRETT: In the strength required by the case; sometimes saturated solution, sometimes extreme attenuation.

Dr. ATKINSON: This subject is highly interesting because it involves the principles, underlying destruction and reproduction of the tissues. I think that the value of every paper should be apprehended and pointed out by the listeners in their speeches, so as to get the greatest good from them. I am disposed to be complimentary to Dr. Harland and thank him heartily for the paper and the evidence of faithful researches. His beautiful discrimination did not seem to find lodgment in the minds of the listeners, in which he said that there was a distinction between pyorhœa alveolaris and that kind of destruction of the gums, connected with the presence of deposits of salivary calculus. Few of us distinguish sufficiently between an escharotic, a stimulant, and a tonic. All these agents have the direct influence of coagulating the albuminous portion of the tissues at the particular point, so that, by the operation of the function of laws, new tissues can be formed. But what will occur after this process of coagulation of the albuminous tissues? It is the retrogressive metamorphosis of the layer of tissue immediately underneath that which has been coagulated. The first step is one of retrogressive metamorphosis or

return to embryonal conditions, and after this the type produces the tissue belonging to the parts by repeating the action of the functional movements that first resisted destruction.

The point of strength of solutions is very important; 20 grains of chloride of zinc to an ounce of water give that degree of coagulation that is analogous to that coagulation that takes place in the evolution of the chicken from the impregnated egg, that suited to the fibrillated condition of the lymph. Aromatic sulphuric acid and aqua regia, one part to seven parts of water, is best suited to that retrogression that is called wasting of the dentinal ligaments, and that is a local disease which occurs many times only on a single tooth; it will start at the margin of the gums from the point where the dentinal ligament attaches and goes to the end of the root without involving enough to approach the transverse processes; the teeth most liable are the cuspids. Where there is no deposit, either salivary, ceruminal or sanguinary, I doubt the propriety of mechanical interference, that is the use of instruments other than the injection syringe which carries any of the agents mentioned in the strength spoken of to the proper points. I agree with Dr. Bogue with what he said about the deposit of myrrh, to a certain extent. When water enough is added to take hold of the alcohol in the solution of myrrh it is precipitated.

When the small-pox blisters are opened and the serum let out, before it is ripened, there will be hardly any scar perceptible. I am reminded from the greyness of my beard, but not the coldness of my heart, or the dullness of my intellect, that I shall not have another twenty-four years to speak to this body, as I did since twenty-four years, without another incarnation. When such questions as these that lay at the foundation of our honest purposes are discussed, I would that it were possible that we were free from the wretched lead that we have found, of confining ourselves by rules, that we would seek each other, when the inspiration answers the question that would be suggested by the asking minds.

Dr. SHEPARD: A patient was brought to me by a surgeon; he had a specific disease and was treated for it and, as a result, had become troubled with so obstinate a ptyalism that he could not reduce it, and this had lasted for three months. The mercurial treatment had been dropped on account of this salivation. Before the commencement of the mercurial treatment his mouth had been put in order by a prominent dentist. Examining the mouth, I found a pronounced

case of pyorhœa, and the patient was left with me. Pus could be expressed from the margins of the gums in all regions of the mouth, and the discharge was so profuse as to make spots the size of the palm of my hand on the pillows at night. By nothing but surgical treatment and a stimulating mouth wash, syringing with aromatic sulphuric acid, somewhat diluted, under the gums, he returned to the surgeon in two weeks' time, the gums perfectly well, the pyorhœa all gone, and the surgeon renewed the mercurial treatment without a recurrence of the trouble. The deposits under the gums were in this case very slight. I have been very much interested in the article by Dr. Harland. I would not discredit the results of Dr. Harland, but I still think that the thorough removal of the accretions, with cleanliness and syringing with zinc or aromatic sulphuric acid solution, is all that is necessary for treatment. The essayist was undoubtedly correct, and it should be emphasized still more strongly than by the succeeding speakers, that the salivary calculus and the deposits on the neck of teeth which give rise to the affection in question, are different and distinct things. This disease is found upon every tooth in the head where there is no salivary calculus and never occurs, namely the palatal surface of the upper molars, the labial surface of the upper incisors and such positions. I wish we could know something about its etiology. I do not remember to have seen anywhere an explanation of the causes, and our treatment is empirical.

Dr. PEIRCE: The experience which I have had leads me to certain conclusions. I have had many cases of pyorhœa and in most of them, when the conditions are found in the mouths of children, I think that they are not pyorhœa but local inflammation; they present similar features, but yield to treatment and get well, and these I do not consider real pyorhœa; but I have never met with a case of urinary calculus, without finding one or more teeth affected with pyorhœa. This fact has led me to believe that the disease is a local expression of a systemic condition, and that the deposits from urine correspond with the accumulations found upon the teeth. We find the disease between the ages of 25, 30, and 45; we find accompanying the disease, if not always preceding it, a filling up of the pulp-cavity and calcification of the tubuli, and then we find also deposits which resemble tartar on the neck of the teeth. This indication precedes the breaking down of the alveolar processes; it precedes the exudation of pus from the alveolar socket, and precedes the inflammatory condition of the gums. An effort has been made to stop the prog-

ress by drilling into the pulp-cavity and devitalizing the pulp, supposing by that to stop the progress of the disease, but it was not found an effective treatment. I do not believe that the disease can be cured, but the progress of the disease can be modified, and the teeth kept from ten to twenty years by careful treatment. By wiring the teeth to neighboring ones they may well be kept in the mouth, but the patient has to come every three months, and the pockets have to be thoroughly washed out with aromatic sulphuric acid on a stick, shaved down so as to resemble a spatula. This aromatic sulphuric acid also removes any accumulation on the neck of the teeth. These accumulations I believe to accompany the disease by virtue of the systemic condition, but not being its cause. By their presence they act as an exciting cause, stimulating further progress.

Dr. RHEIN: I have had a number of cases where constitutional treatment of some kind relieved the patient, but after the treatment had stopped, a recurrence of the trouble took place; invariably in these cases a slight deposit was around the neck of the teeth. Very few patients keep the teeth thoroughly clean; it is almost one of the impossible things, and with patients, suffering of this terrible disease, this point becomes so much more imperative.

Dr. FIELD: The assertions of Drs. Harland and Shepard that there is a marked difference between pyorhœa and salivary calculus seem to be something we want to understand more about; never an analysis of this deposit was made. We know what salivary calculus is, it has been analyzed. But we do not know what the deposit of pyorhœa is. How can the essayist and my friend from Boston reiterate so strongly that both affections are entirely distinct? I feel more powerless in the treatment of this disease than anything that comes under my hands. I would like to know the diagnosis, where the one begins and the other ends. Dr. Harland himself could not tell in a case where pyorhœa and salivary calculus come together. The only difference that I could see was that salivary calculus was harder and denser than the deposits of pyorhœa.

Dr. ODELL: I think the indiscriminate use of aromatic sulphuric acid to be likely to result in a good deal of injury. I gave to one of my patients a weak solution of aromatic sulphuric acid and allowed him to use it and the result was that the first right central, being the tooth I was at work upon, did not exactly get lost, though it lost all its pericementum way up to the apex, but it took also the other central, which was all right, about one-third away. Chloride of zinc is worse

still. Dr. Atkinson mentioned the fact that, if you treated small-pox right you are all right and not marked; I had it very lively; you could not put a pin to my face without hitting one, but few now would see it, and only on close inspection a mark may be seen here and there.

Dr. PIERCE: If I made the impression that I recommended the use of the aromatic sulphuric acid, indiscriminately for patients, I made a wrong impression. My remarks will show that this was not what I meant. Most patients affected with this disease crave acid drinks; a lady even used lemons at night.

Dr. ALPORT: I would state that I have used eugenol in the treatment of an eruption of the skin, which resisted all other treatment, with success. I consider the pyorhœa entirely constitutional in the large majority of cases, but the disease of tartar may be entirely local. In most cases of pyorhœa alveolaris there are other evidences of debility in the system; the poison breaks out and this is the outlet. In many cases it is connected with urinary diseases. Also bacteria are found there; we find them in the deep pockets; the disease cannot be treated locally only; just like an abscess which will recur, if the trouble is systemic, so is this disease. The eugenol is a powerful germicide, and also a stimulant, hence it probably acts in both ways. Chloride of zinc acts in a similar manner.

Dr. TRUMAN (being granted the privilege of the floor): I never heard a more absurd proposition promulgated than that this disease is produced by deposits of tartar; I have endeavored to investigate this matter for the last 20 years, ever since Magitot gave to the disease its name, and when he recommended chromic acid for treatment. What is pyorhœa alveolaris? Is it anything more than a local irritation aggravated by systemic conditions? In my judgment it is nothing more than an alveolar abscess translated from the apex to the neck of the tooth, in other words, an irritation of the pericementum; as a consequence we have absorption of the alveolus. How is it produced? Not by pressure, if I understand it. What then does produce it? What is pus? Pus is leucocytes—wandering cells. What are these wandering cells? They are amœbæ. What is the function of the amœbæ? It is absorption, and in proportion as we have amœbæ, we have rapid absorption of the tissues; that is my judgment. What do we have at the neck of the teeth? We have irritation of the pericementum, we have then pus.

Adjourned.

MORNING SESSION—*Wednesday, Aug. 6, 1884.*

Called to order at 10 A. M., President Darby in the chair.

The privilege of the floor is granted to Professor Chas. Mayr, of Springfield, and to Drs. Bazin, Lovejoy, Borden and Andres, of Montreal. The discussion of the paper of Dr. Harland, of the previous session, is continued.

Dr. SHEPARD: I would request all speakers to be exact in their expressions; I, myself, said yesterday: "dilute sulphuric acid;" that was inexact; I should have given the strength. I meant the proportion of one part of sulphuric acid to three of water.

Dr. ATKINSON: If dilute sulphuric acid meant one part of acid to three of water, that would be much stronger than aromatic sulphuric acid tincture.

Dr. SHEPARD: I meant aromatic sulphuric acid.

Dr. ATKINSON: That is just why I meant that the gentleman should also be exact.

Dr. SEARLE: I love to ask the questions, Why and What? In the first place, why use these various remedies for pyorhœa alveolaris? I think we have not gone deep enough into the nature of the disease. We hear it said sometimes that decalcification and caries are synonymous, also pyorhœa and decalcification. They are both diseases of the soft tissues, the lime-salts have nothing to do with them. If I have right studied pyorhœa, I would declare it a disease of the pericementum. Originally it is set in action by some irritant, and that irritant may be tartar, lower organisms, or mechanical irritation; but, whatever may be the cause, the disease starts in the pericementum and works itself far down between the alveolus and the pericementum, before it makes itself manifest at all; the disease has been operating usually for a long time, before we notice it, and, unless we can apply our remedies to the special parts affected by the disease, we might just as well throw them on the sidewalk. We all know that ptyalism and the various affections of the mucous membrane are not pyorhœa. We know that inflammation is not the disease in question, until it progresses to a certain stage. Now, where does pyorhœa commence? We cannot define exactly at what point of the inflammation of the pericementum the disease commences, but probably during the stage, when the pericementum itself becomes involved in the disease. If the tooth is extracted, the tissue is so changed that you can hardly separate the changed pericementum and cementum. *To cure the disease*, we have to remove all foreign matter, you have to go down

to the point of union between healthy and diseased tissue, and to treat it as a disease, not as an injury; you have to recognize it as a disease and treat it as such. How shall we treat it? After removal of foreign matter, we dress it like any other wound as nearly antiseptically as possible. If it is a germ disease or not I do not know, but in some cases it may be and deserves as much an antiseptic treatment as all similar diseases. The best antiseptic (Lister) dressing I am acquainted with is carbolic acid, full strength, or some other coagulator, and applied, as stated last night, far down to the point of union between diseased and healthy tissue. What more can you do? The teeth cannot rest, you cannot apply a plaster as to an ulcer of the skin; in these ulcers around teeth the carbolic acid itself will form a coating by coagulation, which will keep out extraneous matter; it is virtually a Lister dressing. How about the method of repeating the treatment every few days? I would say: Let it alone most severely. Having once performed an operation, amputated a limb and dressed it, you let it get well alone. Give nature a chance, do not disturb it. Somebody spoke of the application of external friction; this I think perhaps the best way of removing food substances, etc., that lodge accidentally between the alveolus and the roots of the teeth. Let your patient place the finger low down and move it up, so as to compress the tissues, and then rinse the mouth with a bucketful of water.

Dr. STOCKTON: It does not seem necessary to say any more about the subject, as any one keeping the ears open last evening evidently knows everything about the subject. One gentleman, very prominent in the profession, said it was a matter of deposits that could be cured by remedies, another said it was not a matter of deposits and could not be cured by remedies; one said a saturated solution of an acid would cure it, the other said there was no such thing as a saturated solution. I do not know any more about it than I did before coming. I thank Dr. Harland for his paper and hope he will give us the etiology of the disease another year.

Dr. HUNT expresses thanks for the paper, considers the disease constitutional, and thinks people and tribes who live simply in accordance with nature, have better teeth.* Also he considered the disease as one of the symptoms of urinary troubles.

Dr. SEARLE: Cases on which I have been pegging away for five or eight years have yielded in short time to strong carbolic acid.

*This is an old and thoroughly exploded notion.

Dr. PIERCE: I did not mean to say that urinary calculus was the cause of pyorhœa, but the systemic condition which is cause for one disease, is also for the other. There are cases of pus in the alveolar socket, due to local causes; these removed, the disease will subside. The disease is hereditary in many cases. I think, if you make inquiries among your patients, you will hear them tell that "father and mother lost their teeth in the same way," "all the teeth of father and mother came out without decay, all sound," etc. I do not believe in the transmission of diseases, but of tendencies.

Dr. WATKINS: Dr. Pierce thinks the disease cannot be cured; I would like to give a case where I think I cured it. It was one of the incisors, elongated, pressed out of position, surrounded with pus pockets everywhere except one small space, the labial surface; the tooth was very loose; I examined it and found a very little tartar about half way up the root; I removed this and the border of the alveolus which was necrosed; I applied aromatic sulphuric acid full strength; a week afterward the patient came again; I found that I had overlooked a small spot; I treated this in the same manner and dismissed the patient; this was three years ago, and the tooth is still sound in the socket.

Dr. HOWE shows a few instruments, one a syringe with a fine platinum tube, the other a scaler to remove deposits by pushing or pulling, and the sides shaped to scrape the diseased alveolus.

Dr. HARLAND: The differences between salivary calculus and pyorhœa are great. In the first affection the pericementum has not been detached beyond the line of deposits, in any event the salivary deposit is all around the neck of the teeth and continuous, not broken up into islands, to say so; the pericementum cannot be lifted from the root of the tooth beyond the line of salivary deposits. Whatever may be the initiative of pyorhœa, if mechanical, chemical, traumatic, or anything else, it has a beginning at the gingival margin, at the ligament surrounding the neck of the tooth. It is believed, in connection with this injury, that micro-organisms of a peculiar form are found, that they manufacture a soluble ferment which destroys the tissues in advance; if that theory be correct, it is necessary that a remedy to destroy these micro-organisms be injected. The reason for the frequent injection is, that the remedy you use may destroy the developing organisms, but not destroy the spores, so that in three or four days it would be necessary to repeat the injection and so on, until all spores have been destroyed. Dr. Black of Jacksonville has

advocated this theory. It is no wonder that Dr. Pierce comes to the conclusion that the disease is not curable, if he used only one remedy, which, as he himself said, could not be applied in all cases. I have received hundreds of letters from all over the U. S. I have visited the colleagues in their offices who said to me they were trying the treatment I recommended and asked me to see the patients, and, when I asked for the remedies and instruments, to show how to manipulate the instruments and to use the remedies, they did not have them. How can a gentleman expect to accomplish anything unless he himself will faithfully try and be honest! It is no criticism against a method or treatment, if the criticizer himself does not practice or attempt to practice what is advocated. (Cheers.)

Dr. BROWN: There seem to be two grounds taken in this discussion, the one that pyorhœa can be cured, the other that it cannot. Now let us take an intermediate ground. Who would think to condemn a physician, because, when he cured a sore throat, it recurred in a year, nor, if any one had cured pyorhœa alveolaris, and the tendency or disease reappeared in three or four years, the dentist. It takes generations of treatment to cure the disease and eradicate it. The child says: "Mother's teeth dropped out and sister's did; fearing the disease, I come to you." The question is not whether it can be cured permanently. Dr. Harland is right, he has cured cases, so have I, and so have we all, but can one tell what the cases will be in five years? Many will recur. Does a man allow his house to burn down because it caught fire three or four times while the neighbor's stone house never caught?

Dr. SHEPARD: From my observation I think the disease can be wiped out in the first generation. Taken in the incipient stages it is as curable as any disease; there will be no loss of the alveolar processes. Patients should bring their children to us in early life; the tendencies, as Dr. Pierce said, are hereditary; we need to watch for them. The term pyorhœa, meaning originally pus-flow, is used now also to mean the loss of tissue and the inflammation; the section of nomenclature has not been used in the proper direction.

(It is moved to pass the subject.)

Dr. ATKINSON: If we care to know anything about it, we had better tarry where we have most need of light, and not pass the important subject for mere formulæ. We are now exactly in a position to get some conceptions in advance of the mass of nonsense that has overloaded all functional activity in healthy and unhealthy modes of

expression, and I would be sorry to have so interesting a subject passed.

Dr. KINGSLEY thinks all has been said that the eminent practitioners in the meeting knew about the disease.

(Discussion is continued.)

Dr. ATKINSON: We have heard a good deal of sense and of nonsense; some have classified disease in the plural before they have defined it in the singular, and they have got so entangled in perception that we have had a hodge-podge of brilliant perceptions so intermingled as to be made worthless. Let us get our minds to the point of what a disease is, and how it acts, and whether it is capable of being limited or annihilated. There is such a thing as antidoting of diseased activity which is the result of the introduction of foreign elements into the functionary body. Every phlegmonous abscess is self-limiting and self-curing; it will go in the direction of the least resistance; if the flow of pabulum by pressure is prevented it will abort. Why does not pyorhœa alveolaris heal? It is the introduction of micro-organisms which float in the air that set up a ferment adverse to the formation of tissues, so that they might be built after the type of the tissue. I cured a case of twenty-four years' standing of a man from Taunton, Mass., in eight days. I then used wood creosote. What is recurrence? It is either recurrence of imbecility on the part of the investigator or malevolence by persisting in a wrong position. Those cases of which we speak as recurrences are merely territories, only enclosed a little but not healed, in which the bacteria had sufficient oxygen to keep them alive, and they broke down the tissue, until it makes its way by the recuperative law and breaks through on to the surface, or takes another way of curing, which is encystment, whereby the foreign body becomes a mineral like bullets in the body, remaining encysted for years. I have in my own person a splinter of wood that has become resorbed so much that I can find it only occasionally. When you have removed the body inimical to the organization, that organization alone does cure. Anything may be, according to the organization, a food, a poison, or a remedy.*

Dr. BARRETT (chairman of section 7) gives the report of this section. In an excellent paper he reviews the last investigations into the collections of ancient skulls. From the Tropics to the far North, with one single exception, the same diseases existed which exist

*Our space does not allow us to give this excellent speech entire; rather than mutilate it we have omitted the remainder.

nowadays. These investigations are fatal to the theory that dental lesions are of modern date. We eat more phosphates even in the whitest wheat flour than we need.

Some *very interesting* tubes are passed around, containing pure cultures (made by Dr. Miller) of at least four different fungi occurring in the mouth; microscopically, the fungi look pretty nearly alike, but, by the manner in which they grow and affect the gelatine in which they are bred, they show their differences. The tubes are test tubes, having at the bottom sterilized gelatine, inoculated with the peculiar fungus and closed with a tight cotton plug. Some of these tubes show the fungi growing in strings, others show only a general cloudiness, in others the contents are liquified; one of them, well isolated by Dr. Miller of Berlin, produces the decalcification of decaying teeth by the lactic acid it generates.*

Prof. CHAS. MAYR: Almost all the differences in the different views about caries seem to come from an indefiniteness of what and where the caries really is. If a patient comes to you with an aching tooth is the ache the caries? Certainly not. Or the tooth? Again not. Or the plug you dig out? Not at all! But while you were excavating, the patient first said nothing, then he became nervous and complaining as you reached a certain point, which inevitably again disappeared when you reached healthy dentine. The "caries" comprises therefore only that small diseased layer, probably not over $\frac{1}{100}$ of an inch thick, which was sensitive; outside we have the worthless plug or corpse of the tooth substance; inside the healthy or only sore-feeling tooth. Dr. Miller seems to have mostly examined the corpse, and produced the corpse, but not enough that extremely small border line. In an abscess, the pus is not the seat of the disease, nor the inflamed tissue underneath, but that small layer of tissue where the physiological—or if some fogies like the word better, pathological—processes are going on, and the study of this layer will enlighten us about the abscess, but neither the pus or the inflamed tissue underneath, will tell us much.

Dr. ATKINSON:† What is a process? It is a going on of something. What is a thing? A thing is a think. Pathology is only perverted physiology. The function of building a tooth is its evolution,

*These cultures were highly instructive and valuable, and the complete report about them ought to be read by every practitioner.

†We wish everybody would read the full speeches of Dr. Atkinson in the final report. Their fine logical web cannot be extracted. We only give a few aphorisms from this one.

the decay, decadence its downfall. Thanks to Carl Heitzmann and to the angel that squeezed him from Rokitansky's laboratory and sent him over to us, the most ignorant may work now as intelligently as such *anges*. The typal order of the enamel is a modification of that of the dentine; the enamel is really a living tissue as shown by the presence of protoplasmic strings between the enamel rods. The bacteria are not found in the basis substance but in the tubuli of the dentine, going towards the pulp. There are bodies that we have not seen with the highest power of amplification and concentration of light; we may call them ghosts; the ghost of the bacterium is there before the bacterium can begin, when we can color them we only deal with the tracks of ghosts; but the tracks would not feed us; we want to have a ghost for dinner. "Miller was honest." Do you know that it is the greatest insult to a man to have it said of him that he is honest? I would rather like to take five hundred boys of fifteen years of age, that have a good English education to understand my English and agree to make them good anatomists, physicists, pathologists, therapeuticists, and operators in five years than five graduates. Why? Because the latter have said: Error, be thou my truth! Darkness, be thou my light! That is what they have done from the pope down.

Dr. SPAULDING: I have long held the opinion that there is no pathological science except preceded by physiological science, that there is no pathology per se, and that there are no such things as pathological functions, processes and growths; they are physiological functions, processes and growths out of place. Our text-books are full of "pathological" when there really is no such thing. It is the inversion of true physiological forces that produces the exhibition of pathological growth.

Dr. BARRETT: We spent considerable time this forenoon soaring in the infinite. Let us come down to a cash basis. We come here not to study or consider ghosts, but material things. We all love to hear Dr. Atkinson, but the question up now is not to study the tracks but the game. Let us get down to the actual demonstration and actual experiments. We cannot speak of the power of a bacterium as that of a raging animal, boring into the teeth for the purpose of devouring living tissue; that is not the character of the fungi of caries; they are of a vegetable nature. Putrefactive and fermentative conditions are almost the converse; putrefaction does not exist the same time with fermentation. For every one experiment Professor Mayr has made Dr. Miller has made fifty. According to my

own stand-point, the rationale of decay is about like this. First, there will be the decalcification of the exterior portion of the enamel; after the decalcification of the enamel the dentine is reached and at one—maybe single—point, the lime-salts are removed, the substance becomes a spongy mass which takes up within its pores saccharine fluids from the mouth, which are favorable to the development of fermentative fungi; these fungi are in the spongy mass. In the course of their existence, they produce an acid which Dr. Miller proved to be lactic acid, which continues the work of decalcification and so ad infinitum.

Dr. ABBOTT: Dr. Barrett said we ought to deal with actualities and not with ghosts. What we have been able to discern with the naked eye or the strongest power of the microscope, does this put us into the position to say that there is nothing beyond? It was only a few years ago, that microscopes which magnified five hundred diameters were something wonderful, remarkable; but there must be something smaller and smaller—as Dr. Atkinson said, a ghost. Dr. Miller seems to neglect the fact that the tooth has 25–30% of organic material and is a live organ, and considers too much the inorganic salts.

Sections formed and adjourned.

EVENING SESSION.

Paper and exhibit of Dr. J. Williams of New Haven.

Speaker demonstrated how the former explanation of the growth of the enamel-pulp and the dental groove were due to faulty preparations. The paper was very elaborate and, without the illustrations, of little instructive value. We can only advise our readers to get the full report about it. It is exceedingly worth reading, and we do not remember to have listened to as lucid a demonstration of the intricate and dry microscopic detail of the development of the enamel, as that paper of Dr. Williams.

Dr. ATKINSON: I can hardly restrain my joy at the progress made in dealing plainly and simply with the most profound research and interpretation of the manner in which the elements of the teeth are brought within the scope of our perception. Let us delectate a little upon the manner in which we have been blessed by this very rare treat, the chairman of the committee of arrangements had the good fortune to secure.

The accident which happened to the child of Dr. Clifton, of Watchoo, (?) Texas, is reported, and the Association passes a vote of

sympathy, the president of the town is introduced and promises to act vigorously in the matter.

Dr. ATKINSON proceeding after this interruption, Dr. SPAULDING thinks it might be untender; but Dr. Atkinson replies: "The best way to show the sympathy is to go right ahead in our duty." Dr. Atkinson also adds some more historical explanation as to the difference between the conceptions of the school in Philadelphia and Dr. Williams.

Adjourned.

MORNING SESSION—*Thursday, Aug.* 7, 1884.

The committee appointed, reported a proper resolution relative to the death of Dr. Buckingham. Drs. Fredrich and Stockton also pay oratorical tributes to the dead professor.

Dr. F. Y. Clark is admitted by unanimous vote, as a member of the Association, from which he had resigned in former years.

The following list of delegates is reported additionally:

New England Society, Drs. Searle and Blake.

Illinois Society, Dr. Wason.

Missouri Society, Dr. E. T. Smith.

Maryland Dental Society, Drs. Friedrich, Clump and Keech.

Brooklyn Society, Dr. R. Carr.

Odontological Society of Pennsylvania, Dr. Jaffries.

Iowa State Association, Dr. A. O. Hunt.

Sixth District Dental Society of New York, Dr. Stowell.

Lehigh Valley Society, Dr. Winkler.

Dr. Crowell read a statement to the effect that a protective union of dentists against fraudulent patent claims ought to be formed; he invites all to a mass meeting in the afternoon.

The discussion of the paper of Dr. Barrett is continued.

Dr. PIERCE: I think Dr. Barrett has not quite understood the position of Dr. Miller. The latter says, in an article in the *Independent Practitioner*, "A most powerful influence, which we do not understand, is exerted by the living processes in the teeth themselves." And in a similar manner in the *Cosmos*. We have similar facts in the diseases of the plants. Some years ago the potato rot prevailed so, that in a few weeks thousands of bushels of potatoes were spoiled and had to be thrown away; in this year there came a long drouth after the potato had begun to grow, and afterward warm weather, that made them grow rapidly; now, the germs of the potato rot are

present every year, but the potato itself is not so ready to offer to them a habitation one year as another; farmers know these influences well; if, during the growth of wheat, foggy, damp days come, the farmer says, "my wheat will be rusty;" not because the germ is not there every year, but because it got an opportunity for development. We all can recall cases where teeth have decayed rapidly, and, without the aid of the dentist, the decay has ceased, its color has become dark brown; but the germs were there all that time.

Dr. BARRETT: No one feels more than I that Dr. Miller cannot be present. Dr. Pierce seems to think that Dr. Miller considers the micro-organisms only as incidental; Dr. Miller asserts directly the contrary.

The president of the village reports that everything has been done to bring the man who ran over the child of Dr. Clifton, to justice.

Dr. ATKINSON: I think it is well to discriminate how far we have gone in the matter, and how sharply we have apprehended the laws we are dealing with, in striving to get at the truth. If all the organisms that are found in dental caries, are also found where there is none, we must assume that there is some sort of energy that has to be present, to awaken this activity by which the caries is produced—ergo, they are not the initiators of the actuality. Is that a clear proposition, or not? Then, I am justified in saying that we have a ghost; an unseen current of nutrient activity is the first stage of the movements which assist in bringing about the process of decay.

Dr. SEARLE: As I understood Dr. Miller to say, he asserts that the lime-salts and the basis-substance are chemicaly united to form the dentine, and that the same vital force which originally united them, under certain circumstances of ill health breaks down this union. This is all the recognition he gives to the action of the vital forces in the dissolution of the lime-salts. He has not recognized the organisms as directly attacking the fibrils of the tooth. The term "bacteria" is comprehensive and includes micro-organisms which may just as well belong to the animal as the vegetable kingdom.

Dr. F. Y. CLARK: Dr. Miller has done very able and valuable work for our profession and deserves all the thanks his efforts entitle him to. I myself have been making experiments in the same line of Dr. Miller, but I did not succeed. My opinion is that the bacteria produce caries of the tooth by absorption of the bioplasson or living substances in the mesh work of the tooth. I think that there are life-cells and death-cells, and that there is a continued fight between the two sets.

Dr. DABOLL: I had the pleasure of meeting Dr. Miller in New York. I think the doctor is somewhat misunderstood. One of the charms of his papers are the successive steps in which he proves the way the organisms act. Dr. Miller not only has satisfied himself that caries is the result of fermentation, but he has produced caries. It took Dr. Miller two years to get pure cultures of fungi. One of these pure cultures he used to produce the decay of teeth out of the mouth.

Dr. SEARLE: I understand that putrefaction and fermentation are different processes; putrefaction I understand to be the fermentation of albuminoids and fermentation to have for its object farinaceous substances. In the tooth both processes are going on simultaneously, and that explains why we have in teeth both sets of organisms. Some act upon the albuminous, and others upon the farinaceous substances.

After this speech of Dr. Searle, the discussion becomes somewhat muddled and loose, and the subject is finally dropped.

The section on Artificial or rather Prosthetic Dentistry, Dr. TRUEMAN, chairman, reports.*

Another paper by Dr. JOHN ALLEN recommends the continuous gum work as far superior to anything.

Dr. ROBINSON: "Be not the first by whom the new is tried, nor the last to throw the old aside." It does not follow, because a dentist has made a set of teeth, tolerably comfortable and well fitting, that he is competent, nor because he has filled a cavity with gold; that does not prove that he is a competent and good dentist. There is art, poetry and science in the dental work; the true artist lives a perennial glory in his own imagination, for labor is only the visible form of imagination. It is seldom that natural teeth, however homely, can be made better, without lessening the character of the face. It is the combination of artist and mechanic that makes a good dentist. One of the essentials is to make one's own instruments.†

Report of section on Dental Education — Dr. PIERCE chairman.

Dr. PIERCE reviews the work of the meeting of professors of dental colleges requiring now two terms in all colleges, not to be taken in the same year.

As the subject has been discussed so very often in the same manner, and as the speeches were mostly full of enthusiasm which does

*Report was not intelligible in the middle of the hall.

† The paper is very enthusiastic, and like most such papers cannot be well given in extract. We have to recommend to our readers the original.

not get justice from the cold type metal, we omit the discussion upon this subject, which was quite interesting, and which was participated in by Drs. Spaulding, Hunt, Friedrich, Alport, Cook, Abbott, Shepard, Rhein, and Atkinson.

The following resolutions are adopted:

1. That all dental institutions should require that the candidate of graduation should attend two courses of lectures before graduation as D. D. S.

2. That candidates, before being admitted to graduate, should obtain proper proficiency in their studies.

3. That a thorough preliminary examination should be required.

4. That, in reiterating these views, so often expressed, the Association is gratified that the association of faculties at their recent meetings has been in accordance with them.

Adjourned.

Afternoon Session.

No agreement was reached as to fixing rules for delegates to be admitted. The title of Section 1 is changed from "Artificial Dentistry" to Prosthetic Dentistry.

Dr. Taft (report upon literature — extract): During the last two years our literature has received much that ought to be recorded. It is within the knowledge of every member of this body that many principles and incidents of much value never see our literature through the medium of written or printed pages for various reasons. Some excuse themselves by supposed or real inability to write, a few attach very little importance to their own productions, others fear to run the gauntlet of criticism, which is sometimes used with undue severity. How often is the statement made that the larger part of our literature is trash and not entitled to special consideration, and that it would be far better that all books would be destroyed, and that we should have to begin anew? Such criticism is not healthy. I think journalism should be specialized. It might seem practical to have one or two journals in the country devoted to the interest of association work, one or two to professional education, others to oral surgery, operative dentistry and prosthetic dentistry, including metallurgy and chemistry, others to pathology and therapeutics. This would give individuality to the periodicals. A year ago the *Missouri Journal* ceased to exist and was followed by the *Archives*, one of the independent journals, of which our literature has had quite an addi-

tion during the years 1882 and 1883. The third edition of James A. Garretson's Oral Surgery has appeared—a book which has been regarded as a standard work in our profession; we would think that the work is sometimes overloaded with cases, and it would perhaps also be better to have two volumes instead of one.

Prof. MAYR: Perhaps the gentlemen would like a few remarks about the literature of other countries. I received a good number of dental journals from everywhere; from England I received three kinds, one of them containing interesting accounts of club-dinners, toasts and similar interesting dental matters; another contained very windy speeches about legal stuff, which may be all right in detail, but, as the whole foundation is absurdity, has no real bottom.

Austria, a country of about 40,000,000 of inhabitants, almost one-half of them Germans and other civilized nations, has no dental journal at all.

The French journals are remarkably poor for that nation, so prominent in many directions; the most important is run by Ash and Sons of London. It contains remarkably little originality, almost nothing but translations and reprints.

A most curious little journal I received from Sevilla, Spain, issued "with the approval of the bishop!" Well, the contents correspond to the high quality (?) of the authorizing dignitary. It was not worth reading.

The German journals have made great improvements since about two years; quite a number of them are issued and they contain excellent theoretical and practical original articles.

One Spanish dental journal in Cuba is quite good and worth reading.

Dr. DARBY, chairman of Section 4, reported and presented the following subjects for discussion:

A new method of packing gold, as recommended by Dr. Herbst, Germany; he proposes to consolidate gold by a smooth instrument, revolving with great rapidity, with much less pain and inconvenience for the patient. Speaker read a letter from Dr. Bödecker announcing the sending of teeth with gold packed into them according to the Herbst method; but the teeth did not arrive.

A second interesting subject for the discussion is the electric or incandescent light, its uses in the dental practice.

The third subject is the combination of gold and some baser metals.

Fourth, the danger of excessive dryness, consequent contracting and subsequent expansion of the enamel or dentine of the tooth, when the rubber dam and hot air syringe are used. The point was lately brought out in one of the state societies and caused a good deal of earnest discussion. We have gentlemen here who know something of Dr. Herbst's method of packing gold with revolving burnishers.

Dr. ABBOTT has seen teeth filled very well by this process; the instrument has a little bulb, shaped according to the cavity. I have used for many years burnishers of the shape of a tomato for the purpose of condensing the last pieces of gold with the engine; in wheeling around they strike the gold quite hardly.

Dr. HUNT: Is this gold cohesive or non-cohesive?

Dr. ABBOTT: My impression is it was cohesive; I would not be positive about it

Dr. DABOLL: Dr. Miller, when here, gave us a little account. He stated that he had filled several teeth himself in Dr. Herbst's office. The gold is perfectly soft; it is a different gold from what we have; for proximate cavities he made a matrix, which he fastened by the use of shellac, and then he introduced the gold in large masses and packed it without the use of retaining points with a revolving instrument; a large cavity was filled in ten minutes; a test with aniline showed that there was very little leakage, if any.

Dr. WATKINS was very much interested and secured a set of instruments, burnishers of different shapes, small cone-shaped ones, etc. The gold is so-called magnetic gold. It is similar to that sold by Williams, which he termed electric. Dr. Timm gave a clinic and filled a large cavity, using a revolving instrument from beginning to end; the filling was well condensed and put in as nicely as with any other instrument. Dr. Bödecker filled a tooth for me, an upper wisdom tooth with a very large cavity, one-half of the tooth with Bonwill's mallet, then with the lead mallet, then with the automatic mallet, and about the last one-sixth he put in with a burnisher of bloodstone, gotten up by the Whiting Manufacturing Company for Dr. Weal (?) of Albany, who had the idea that gold would not adhere to the bloodstone; the inserting of this last part of the filling into my tooth was just love in comparison with the mallet; there did not seem to be any strain on the tooth. Dr. Weal's idea is, if a cavity has to be prepared with a bur, that a bloodstone, corresponding in shape to the bur, can secure perfect margins. Also an agate burnisher is a fine

thing in burnishing the surface of a filling instead of steel; the agate does not seem to break down the walls of the cavity.

Dr. MACKELLOPS: Immediately after the appearance of the article I sent for a set of instruments; I think they are not polished but only made smooth. I do not understand exactly the manner in which Dr. Herbst uses the gold; if you anneal it, it becomes adhesive.

Dr. BARRETT: I have had limited experience: the gold is exceedingly soft; non-cohesive, soft gold. An entirely new method requires long practice to conquer. The gold is the Wollrad gold; the instruments are smooth, not polished, and bur shaped; the point may become plated, and Dr. Herbst keeps by his side a piece of block tin upon which he rubs his points every little while, and thus keeps them in good order. Although Dr. Herbst makes also contour work, I think the method is not as well adapted for that kind of work as for cavity fillings. This Wollrad gold comes in rather large cylinders.

Dr. HUNT experienced considerable difficulty; found that the gold would not hold in the cavity until he used quite large quantities at a time; fine emery cloth will give to the instruments the right kind of polish. The rotating burnisher is not pressed continuously on the gold but only interruptedly. I have used what used to be Jones's 1,000 fine, a soft foil; also Williams's gold foil worked well.

Dr. ALPORT sees just enough fascination in method to make it attractive, and enough to make it bad; he supposes it to be like the plastic gold of Justi, very few use it now; the gold fillings made by this method will be apt to leak.

DR. PARKER thinks that the quick rotation makes the gold cohesive.

Dr. CLARK put some fillings into the mouth, some thirty years ago, with round dull points rotated by hand.

DR. RHEIN thinks the speed of the instrument heated and annealed the gold in his case.

Adjourned.

MORNING SESSION—*Friday, August 8, 1884.*

Called to order at 9.30.

Spirited voting for next place of meeting. On the first ballot the vote stands: Chicago, 15; Minneapolis, 21; Long Branch, 23. The final vote is Minneapolis, 40; Long Branch, 25; Minneapolis is declared the choice. In the vote for president, Dr. Crouse received 38 votes, Dr. Barrett 6, Dr. Stockton 14, on the first ballot. Dr. Crouse is declared elected. For first vice-president, on the first

ballot, Dr. Foster 22, Dr. Stockton 8, Dr. Field 8, Dr. Rich 5, Dr. Kingsley 4, Dr. Odell 5, the remainder scattering; on the second ballot, Dr. Foster received 39 votes and is declared elected. For second vice-president, on the first ballot, Dr. Rich 23, Dr. Odell 15 votes, the remainder scattering; on the second ballot, Dr. Rich received 28 votes, Dr. Odell 10, remainder scattering; Dr. Rich is declared elected. For recording secretary, Dr. Cushing is unanimously elected; for corresponding secretary, Dr. Harland the same. The vote for the executive committee stands: Dr. Hunt 39, Dr. Shepard 26, Dr. Pierce 24, Dr. MacKellops 11, Dr. Field 11,t he remainder scattering; Drs. Hunt, Shepard and Pierce are declared elected. A credit is voted to Dr. Clifton for the extra expenses, necessary by the accident to his child.

Dr. DUDLEY: The following delegates have qualified:

New Jersey State Society, Dr. Chas. Holbrook.

Brooklyn Dental Society, E. C. Wadsworth, G. M. Farrar.

Ohio State Dental Society, B. Gibbons.

The report of the treasurer, Dr. Kelly, showed:

On hand, August 10, 1883,	$1,647 70
Received dues since the last meeting,	225 00
At this meeting,	565 00
Total,	$2,427 70
Disbursements,	613 77
Balance on hand of	$1,823 93

The usual votes of thanks are voted to deserving railroad companies, etc. A commnnication from a New Jersey society about the pardon of a "dentist," well known in other less legal vocations to some members present, is returned without thanks; the N. J. Society evidently did not know what kind of a man he was.

Returning to the unfinished business of Section 5, Drs. Abbott and Pierce made some remarks and criticisms. During the reading of the minutes of the last session the intermezzo with Dr. Rhein occurred, for which we refer our readers to our editorial part.

Adjourned.

EDITORIAL.

AT SARATOGA.

If a physiognomist had stood at the steps of the town hall in Saratoga, during the days of August 4, 5, 6, 1884, would it have been possible for him, without looking at the signs of dealers, from the character of the faces of the men entering, to see what professionals were gathering here? They were no ministers, in spite of a few white neck ties and black cylinder hats; no school-masters, for they looked too prosperous; no trades people, although white beavers were quite numerous; they might have been taken for physicians, but they did not show hollow conceit and mental impertinence enough to be that; it would have been very difficult to make out the character of the meeting.

The meeting of the American Dental Association was opened by prayer (?) by Dr. Cary. We know we will not agree with all on this point; but it cannot be helped, not any more than we would accept the views of the pope upon dental caries. All such hired prayer and pietastery, be it Catholic or Protestant, is popery, only popery in mental form; the man who was invited to pray did not know the least thing of what he was praying for, and what the dentists wanted; he gave a general soft-soap babbling—we print it verbatim in our number. If dentists come together and want a prayer, they want one to the point. What have dentists to thank God for? For caries, malformations and toothache! Their whole profession would be annihilated without them. What have they to pray for? For more caries, more malformations, and more toothache; for they are the foundation of their business! Just as the farmer wants the dominie to pray for rain, which hurts the sailor, for high prices of his goods, which press on the mechanic,—so the dentist, if he is sincere and honest, can only pray for those things which give him his "daily bread." The god who created decay will not take it amiss, if we pray for more of it; but he created the first decay without one prayer, and it is perfectly insane to suppose that a few insipid words will have the faintest influence upon the production of a single more decay or a single richer patient, than we would have had without these words; one sentence of Atkinson, grating harshly upon the ear of the "liar and scoundrel," is worth miles of the oily, windy, word-conglomeration of the salaried prayist in the service of Catholic or Protestant

popery; we are certainly not mistaken that the majority of the meeting was against the introduction of this "prayer," but, bowing to custom, they were too polite and tolerant toward the few who were in favor of paid enthusiasm. Let the majority show as much grit in rejecting that worthless custom of hiring an enthusiast by business, and let a Dr. Atkinson or any of the members say a few appropriate words, if needs be, words which will not be attempts to boss God's business, but evidences of the speaker's own enthusiasm, which alone inspires others: Verba movent, exempla trahunt; words move only, but examples drag you along.

There was less red tape displayed at the whole meeting than we ever saw before at similar gatherings. The method of excluding all nominations for candidates has great advantages from a business stand-point; but is apt to favor lobby influences. The great popularity of the president for the coming year was shown by Dr. CROUSE obtaining a majority on the very first ballot, without any special work for his candidacy. On the other hand the choice of the executive committee, while resulting excellently in three strong men being put on it, showed the strength which a combination may have, without any appearance of it on the surface, before voting. The balloting for the place of the next meeting was quite spirited, more so than usual. Was there not a little bit of selfishness in those voting for Long Branch?

The stereoscopic exhibit on Wednesday evening was very fine, and the scientific centerpiece of the whole gathering; the speaker, who illustrated his paper, Dr. J. L. WILLIAMS of New Haven, is a man much easier underrated than overrated.

Dr. ATKINSON, the soul and heart of the convention, was never in a better mood, and his speech on Wednesday, part of which we give verbatim, was worth all the prayers ever spoken. He spoke more clearly and more convincingly than ever before, and while we may very much disagree with him in *his* conception of inspiration and intuition, he never fails to leave us improved in something, with some new ideas infused. Dr. Atkinson's influence upon the profession seems to be not so much in the number of new appliances, mallets and pluggers, which he has invented, or the material wealth which he personally derived from his efforts, but in the wealth which is that of all enthusiastic souls, from the philosopher of Nazareth down to our days, namely, no abundance of earthly riches but an immense wealth in the kingdom of mental entities. It is through his zeal, his unquestionable

sincerity, enabled by his perfect freedom from clique connections, and his immense richness in mental possessions, that he is the mental Vanderbilt among dentists. Poor Vanderbilt, with all his bonds, could not—if otherwise possible—induce Dr. Atkinson to exchange his mind for the horse-fleshy, coarse-grained and vulgar skull-stuffing of the New York millionaire, if he had no power to transform and beautify this exchange.

Dr. BARRETT is another such enthusiastic man, but in a different vim; the bump of cautiousness seems to be small in Dr. Atkinson, but it is certainly large in Dr. Barrett; he moves hesitatingly, where Dr. Atkinson dashes, but underlying Dr. Barrett's efforts is not any less enthusiasm. He seems to have the devotion to a friend most especially developed; and, in spite of the many toes he is forced to step on, and consequent fault finding of their proprietors, he sticks to his friend, and his own deep conviction of the friend's and his own value. Dr. Barrett's features express the practical, large-hearted man, who, disdaining to make compromises and in the feeling of his physical and oratorial strength, accepts successfully the challenge of a whole host.

For practical and enterprising ability, Dr. SHEPARD is probably a model; all his make-up is expressive of the successful practical spirit which looks at the speculative dreams from the stand-point of his well earned reputation as one of the most successful dentists in the invention of simple appliances.

Dr. SEARLE, who never before took an active part in the discussion, seems to have made up his mind to let the profession have some of the wealth of experience gathered during a practice of almost half a century.

Dr. ALLPORT, another prominent practical dentist, showed, for a man from Chicago, an unexpected self-denial; he spoke against Chicago as the place for the next meeting and recommended Minneapolis. Would he have recommended with as good grace St. Louis?

Dr. HUNT of Washington represented the boys in gray before the convention. We do not doubt, if there was a standing army of any size to speak of in the United States, that Dr. Hunt would be an officer in it; we have seen that face in the standing armies of all nations; it expresses duty without any further question, and ability to direct the efforts to the best point. His statements at the mass meeting, held Thursday, August 7, were perfectly in accordance with the soldierly dress he wore.

This MASS MEETING brought out another powerful enthusiast in the person of Dr. DWINNELL of New York. The meeting opened with over one hundred of the most prominent dentists in the United States in attendance, but Dr. Dwinnell drove a good horse too long and tired out the members; not, that the matter was not interesting or highly important and considered so by all men, or that Dr. Dwinnell had not the full sympathy of the meeting: in his zeal, he was so carried away, that he did not notice that he was telling the same thing over and over again. Dr. Dwinnell described the transactions of the Richmond Tooth Crown Company and the peculiar way in which dentists were induced to pay licenses for patents, after it was proved that they were obtained by perjury. The alleged inventors themselves became victims of a legal sharper; all the plans of the extortionists were so well explained, that it became the duty of all dentists present to give their full support to this meeting. Dr. CROWELL was in reality the secretary of the mass meeting, although Mr. Zeiss, who is no dentist, was designated as its secretary. It was resolved to appoint two members from each state to canvass all the dentists of the Union to contribute toward their common defense. The causes why dentists are forced to pay fraudulent licenses seemed to be: First, The skill of the lawyers of the fraudulent patent owners in picking out men who, from financial weakness, have to let the case go by collusion. Second: The ease with which one United States Circuit judge considers the decision of another judge as binding for him; this might be properly called judical laziness. Thirdly: The clumsiness and difficulty of getting things into and through the Supreme court; the legal aggressor is plainly in the advantage by this defect. Fourthly: The incompetency of the respective patent examiners who are only patent granters. Fifthly: With the great power of even fraudulent patents such protective unions, as well pointed out by some in this mass meeting, often squander their means in defending all the small detailed attacks of the impostors, instead of making the one and only safe move, to have the patents declared frauds. If the law furnishes no redress, rather "boycot" such fraudulent patents and the object of their fraudulent claims, until a final decision could be obtained. Dr. Hunt seems to have been a special sufferer in former years and in the fight against the rubber patents.

For the first time we met at this meeting Dr. SPAULDING, the editor of the *Archives*. How one may make mistakes in one's fancy! Not being familiar with the history of dental works beyond a few years, we

thought Dr. Spaulding a young man somewhat like Dr. Harland, but he is one of those with "gray beard, but not a cold heart or dull intellect." He is of an Atkinsonian turn of mind, only less fiery and intuitive.

A very necessary and important man was Dr. ODELL, the genial New York dentist, who, as one of the members of the executive committee, was more than many others responsible for the success of the meeting.

But we cannot close, without telling the story of a promising young man who afforded a good deal of amusement in the well-known sport of getting sat upon, namely, Dr. RHEIN. Many of us have been at church sociables, and in a mild manner a similar game is played there, which affords much amusement; with great skill and evident practice it was also played to cheer the dying moments of this year's convention. Dr. Rhein is a young, earnest and courageous dentist, apparently looks still younger than he is, who will be a power in the future, and that little downing will only do him good. Every man likes much more to pay a bill, when we present it to him with a smile, than when we say: you have got to pay this bill! it is my right, and "I demand it!" Almost everybody feels as if bound by duty and cussedness to fight that bill, and that was what happened to Dr. Rhein. There could be no shadow of doubt that, in the principle, he was correct, and every court would sustain him, but the form in which Dr. Rhein asserted his right, was exactly calculated to induce the majority to have a good sound sit down. No harm was done, Dr. Rhein's zeal will not be abated, let us hope; to him the excellent lecture of Wednesday night from Dr. Williams was due; he worked as chairman of that section to secure it, etc., and he will come out gloriously when scores of the older members have shared the fate of old Cæsar; but he will learn that right by itself is not what the majority will acknowledge, it must be asked in a begging form. As things went, the result was comical enough. He, the chairman of Section 4, when making his report was ruled out by the president, because he introduced his report by the mentioning of names, and had the intention of expressing thanks to Dr. Williams; but, even before it was clear what he was going to say, the president did not give him time to have his say, but right away declared him again out of order, whereupon—like every other dentist—he withdrew, leaving the convention without any report from its own fourth section! The president was sincere, but to outsiders appeared too quick in his decision, shooting at the bird,

before it had yet fairly come within his reach; he made the bird only flutter and enlisted sympathy in its behalf. As we are not giving the minutes we are not under obligation to abide by the vote of the majority not to mention this whole little fun in the minutes.

The feature of the first evening's session was Dr. HARLAND's paper on pyorhœa alveolaris, a very clear, concise work in which the only fault we could find was, the love for prescriptions. He was one of the most grammatical and logical off-hand speakers in the convention; his paper was discussed extensively for two sessions.

Dr. BARRETT showed in the report from his section on etiology samples of pure culture of micro-organisms by Dr. Miller. They were evidently not appreciated, and there was no doubt that this detail was a trifle beyond the information of the majority; the scepticism was far more powerful than even Dr. Barrett's rhetorical skill could cope with. In defending this subject he met with less approval than we ever saw at any former occasion accorded to this, doubtless important and earnest man.

The veteran of the germ theory in America, who has stood much ridicule for it in former years, Dr. F. Y. CLARK, was also present as a member, and had the satisfaction that at present probably not one member doubted the general truth that, at the foundation and for the practical dentist only to be considered, micro-organisms are the cause of decay. The oxygen and ammonia speculations were without a defender; not one member spoke of them.

In the morning session of Thursday the subject of dental literature received careful treatment from Dr. TAFT, and the president, Dr. DARBY, as chairman of the section on operative dentistry, outlined the subjects for discussion in this section, which, however, was prevented by the closing of the meeting.

The painful accident which happened to the child of Dr. Clifton of Texas, which was run over and very badly injured about the head and neck, was made the subject of anxious care on the part of the Association; it expressed its feeling in proper manner by putting the hands in the pockets and voting material support by granting a credit to Dr. Clifton.

The *New England Journal* feels especially bound to thank the convention for granting the privilege of the floor to a man, not a dentist, but connected somewhat with its editorial staff; and to Dr. F. Y. CLARK, who nourished, guarded and sheltered him.

Many prominent men at the convention would deserve special notice, but space and patience of our readers do not permit us to do so. Long may the association live and prosper!

THE METRIC SYSTEM IN PHYSIOLOGY.

BY CHAS. MAYR, A. M.

What enormous advantages this system has in this branch of science over the wild, absurd, crude English measures, which the Americans have adopted or rather conserved with such an ill-deserved piety, may be seen from the following. There seems to be a secret conspiracy of schoolmasters and all the old fogies to make the metric system appear as large and complicated as possible, so as to let the foot, firkins, mile, etc., not appear too absurd. But all this theoretical complicatedness does not appear in practice. Only the following divisions are used:

Measure of length: 1 mm. (millimeter) = about of an inch.
10 mm. or 1 cm. (centimeter) =about .4 of an inch.
1000 mm., or 100 cm, or 1 m. (meter) = about $3\frac{1}{3}$ of a foot.
1000 m., or 1 km. (kilometer) = about $\frac{2}{3}$ of a mile.

Measure of surface: 1 □mm. (1 square millimeter) = $\frac{1}{6000}$ of a □inch.
1 □m. (1 square meter) = 11 □feet.
100 □m. = 1 are (for land meas.) = 1,100 □ft.
100,000 □m. = 100 ares (1 hectare) = 3 acres.

Measure of cube: 1 cdm. (1 cubic decimeter) or 1 liter = 1 quart.
1 cmt. (cubic meter) or 1000 liters = $1\frac{1}{3}$ cubic yards.

Liquid: 1 liter (about 1 quart).
100 liters or 1 hectoliter, for beverages in casks, etc.

Weight: 1 mgr. (1 milligram) about $\frac{1}{60}$ grain,
1000 mgrs. or 1 gr. (1 gram) about 16 grains,
1000 grs. or 1 kgrs. (kilogram) about $2\frac{1}{4}$ lbs.
1000 kgrs. or 1 ton, exactly 1 ton of 2200 lbs.

Heat: Thermometer Centigrade. Water freezes at 0°, boils at 100° c.

One caloric is the amount of heat required to heat one kilogram or liter of water at about ordinary temperature by 1° c., say from 1° c. to 2° c.

All the other subdivisions are only used by people not familiar with the system, and cranky persons; there exists the nicest relation between all these measures, and without any hesitation, a problem like the following may be solved mentally by any one knowing the

metric system, while we defy almost any foot-system defender to solve it in his system without paper.

If a gallon of sulphuric acid weighs 14.4 pounds, how many gallons in one ton?

In the metric system the same problem reads:

If one liter of sulphuric acid weighs 1.8 kgrms., how many liters in 1000 kgrms.?

The problem in the foot-system includes the possibility of three kinds of gallons and tons.

It is an especially simple one, nothing complicated about it.

From the *Progreso Dental* we copy figures in the metric system concerning physiology. Our readers will find the table very convenient to refer to.

Dr. Octavio Gourges gives this synopsis which is worth knowing.

The heart weighs about 265 grams.

The weight of the blood is about $\frac{1}{13}$ of that of man, hence about 5–6 kgrms.

The loss of $\frac{1}{5}$ of the blood is sufficient to kill a man; a man dies after having lost 1.2 liters of blood.

The human heart propels with every contraction 180–200 grams of blood, with a pressure of $\frac{1}{4}$ of the atmosphere or about 19 cm. mercury.

The velocity of the blood is 35cm. a second.

An injection of a deadly amount of a poison into a vein produces death in 15 seconds; into the skin in 4 minutes.

The size of the blood corpuscles is 7 micromillimeters and their thickness 2 micromillimeters.*

The breathing surface of the lungs is 200 square meters. Man breathes about 14–16 times a minute.

The quantity of air breathed in 24 hours is about 10 cubic meters.

The quantity of oxygen absorbed by the body is about 500 liters in 24 hours; the carbonic acid gas given off 400 liters, or sufficient to vitiate in one hour 4 cubic meters of air.

The length of the digestive canal is seven times the length of man or about 11m.

Liquid secreted in 24 hours by the human body:

Saliva, 2 liters,

Gastric juice, 6.2 liters,

*A micromillimeter equals 1-1000 millimeter. This micromillimeter is far superior for microscopic measures to the fractional divisions of the inch, because of its smallness and definiteness. 1-25,000 of an inch equals 1 micromillimeter.

Bile, 1.3 liters,
Pancreatic juice, 1.8 liters,
Intestinal juice, 5 liters,
Perspiration, 1.3 liters,
Urine, 1.5 liters,
Total, 19.4 liters.

The heat of the human organism amounts to 2,000 meter calorics each day; that is, 20 liters of water heated to 100° c.

The height of a tall man is about 1750 mm. to 1900 mm., short people about 1300 mm.

The temperature of the body is 37° c.

The surface of the human body is 175□ cm. (square centimeters).

To live in good health and keep his weight an adult man ought to consume, daily, in the average:

Meat, 480 grams,
Bread, 470 "
Fat, 100 "
Water, 440 "

The bones of the skeleton number 198 (?), the muscles 500.

MISCELLANEOUS.

TO THE DENTAL PROFESSION.

After the adjournment of a special meeting of the First District Dental Society, held in the city of New York, July 2, 1884, on motion of Prof. Frank Abbott, a mass meeting was organized for the purpose of forming a Dental Protective Union.

On motion of Prof. Frank Abbott, Dr. William H. Dwinelle was elected President.

On motion of Dr. A. L. Northrop, Dr. W. A. Bronson was elected Treasurer.

On motion of Dr. A. L. Northrop, Dr. John M. Crowell was elected Secretary.

The officers were appointed a committee to inform the dental profession of the formation of the Dental Protective Union, which has for its object the protection of the dental profession from unjust prosecution for infringement of so-called dental patents.

The committee request all dentists who are threatened with prosecution to inform them of the fact, that they may investigate the matter, and advise them of their rights and aid in their defense.

All communications to be addressed to the Secretary,

DR. JOHN M. CROWELL,
No. 104 West 42d Street, New York City.

OPERATING TABLE AND LABORATORY.

PYORHŒA ALVEOLARIS.

Dr. Harland gives a continuation of the paper of last year, bringing out some more details suggested by numerous inquiries. Speaker is gratified to know that his efforts have been so spontaneously recognized, and expresses acknowledgment. Many in the profession are very likely to confound salivary deposits on the lower incisors or on the palatal or labial surfaces of molars with pyorhœa alveolaris; these are only in a slight degree the cause or associated with this affection, except in incipient cases. In all cases of abundant discharge, there may be observed a loss of tissue on the processes around the teeth, whereby their symmetrical outline becomes irregular and finally leads to extensive destruction of the bone.

It is not a disease of old age, not any more than of youth or middle age; I have seen it as early as the ninth year, and several times before the sixteenth year; I am unable to say at what period of life it is most frequent; my experience leads me to think that between the ages of 25 and 40 it is most frequent. Pulpless teeth do not escape the ravages; users of tobacco are not less liable to attacks than those who do not use it; one of the worst cases occurred where it never was used. In the course of the disease, the teeth twist, change position, protrude, and, if thoughtlessly extracted, the features may be greatly altered. The fact remains that a vast majority of cases is unaccompanied with salivary calculus. In most cases, the gums have a purplish color, corresponding to the shape of the pockets. As regards the treatment, experience has shown the necessity to use brooches of extreme delicacy to examine the pockets for their depth, sanguinary deposits, etc. If salivary calculus is found, it is removed, and the patient treated with a mixture of

Pinus canadensis, ½ oz.;
Aqua rosae, 1 oz.;
Eugenol, 30 drops—twice daily.

To remove the calculus, I use Cushing's scalers; with ten or twelve instruments, all necessitating a pushing motion, one is fully equipped for the removal of any deposit. In addition, two or three properly shaped excavators are necessary to scrape the edge of the alveoli. A fine-pointed syringe is needed, not too sharp, with the opening at an angle instead of at the point. H_2O_2 (hydrogen peroxide) ought

to be injected immediately after removal of deposits or excision of the edges of the processes. I use also iodozinc in solution, 3 to 48 grains to one ounce of water, and begin by the injection of three or four drops into each pocket, after the injection of $H_2 O_2$. I have also used eugenol and sanitas oil in place of hydrogen peroxide. I direct my patients to brush the gums with a stiff brush and discontinue the use of the pinus canadensis after the beginning of the systemic treatment of the pockets; loose teeth are bound together with binding-wire of silver, platina, or gold; at the beginning, the patient is required to apply once in four days. Should constitutional treatment be called for, this is also used. When the suppuration ceases, the injection of hydrogen peroxide is discontinued and a dentifrice of the following formula employed:

Precipitated chalk, 2 oz.;
Orris root, 2 oz.;
Castile soap, ½ oz.;
Powdered borax, ½ oz.;
Powdered myrrh, ½ oz. (?)
Glycerine and honey, enough to give a paste.

If desired, I add about twenty drops of eugenol. It will be found a valuable addition. After the fourth or fifth visit, the interval may be larger—once a week, and so gradually increased. As stated before, in all cases of pyorhœa with pain, iodoform made into a paste with oil of cinnamon and oil of eugenol is an excellent anæsthetic. I have also had good results from injection of a weak solution of chloride of alumina, one to two grains to one ounce of water. Iodochloride of zinc, a saturated solution of iodine, wood creosote, iodoform, eucalyptol, a diluted alcoholic solution of menthol have been used, but I prefer the first-mentioned remedies.—*Paper of Dr. Harland, at Saratoga, Aug.* 5, 1884.

ON EUGENOL AND SANITAS OIL.

Eugenol is nothing but the principle of oil of cloves. It is known among chemists and in the dispensatories as eugenic acid. It is prepared by decomposing eugenate of potassium with sulphuric acid; it is rectified and obtained as an oil of low specific gravity. It has the odor of the oil of cloves and the composition $C_{10} H_{12} O_2$, it is not decomposed at ordinary temperature, has no tendency to become thick on exposure to air, or to precipitate a sediment. It may be diluted with water or alcohol. It is a powerful parasiticide. When

applied to an exposed pulp, the pain is greatly reduced and soon ceases altogether. If the cavity is previously washed with biborate of soda, it is probably the best dressing for slightly inflamed pulps, not excepting the various iodoform pastes. It may be injected into fistulous tracts and the hole sealed immediately. It is necessary that the root should be thoroughly filled. I have injected three drops into the interior of an epulis, and in three weeks it disappeared. As an injection into the root, it should supersede all the powerful coagulators; diluted with water, 1: 1000, it forms an agreeable dressing and may be substituted for $H_2 O_2$. With proper precaution, it may be injected full strength into an abscess without danger.

Sanitas oil is obtained by the oxidation of oil of turpentine. We know a great many oxidation products of it. It is produced from turpentine floating on water, by directing a stream of heated air on its surface. It contains an empyreumatic oil and a substance probably identical with $H_2 O_2$. It possesses oxidizing power equal to a ten volume solution of $H_2 O_2$, and may be considered as a convenient method of storing $H_2 O_2$. In it we have a germicide of the first rank. Combined with volatile oils, it gives a dressing which is disinfecting, antiseptic, and not poisonous. It has the odor of fresh pines, which may be disguised by oil of gaultheria, eugenol, or eucalyptol, but a large volume is needed. It has been used for injection in the pyorhœa pockets, in the treatment of alveolar abscesses, and as an ingredient of mouth washes, for the treatment of recent wounds, and as a dressing over exposed pulps. It is soluble in alcohol and ether, and some of the essential oils. Both may be procured: Eugenol from Seward & Merks, and sanitas is made by the Sanitas Company, in London, England, imported by Sargeant, Chicago. (Cheers.)

Paper of Dr. Harland, at Saratoga, Aug. 5, 1884.

MONTHLY LIST OF PATENTS.

For Inventions relating to Dentistry, bearing date July 22 and Aug. 26, 1884. Reported expressly for this Journal by Louis Bagger & Co., Mechanical Experts and Solicitors of Patents, Washington, D. C.

301,237. Dental engine—W. S. How, Philadelphia, Pa.
301,722. Dental engine—W. A. Johnston, Clifton, N. Y.
312,430. Dental engine hand-piece—J. Roque, Philadelphia, Pa.
302,629. Dental breath-guard—W. C. Foulks, Philadelphia, Pa.
303,870. Dental engine hand-piece—E. T. Starr, Philadelphia, Pa.
303,890. Manufacture of dental plates—C. C. Carroll, Baltimore, Maryland.
303,171. Dentist's chair—M. L. Long, Philadelphia, Pa.
302,949. Inhaler—R. Skene, Louisville, Ky.
303,723. Dental engine hand-piece—H. S. Grace and W. A. Miller, San Francisco, Cal.